

REMARKS/ARGUMENTS

Claims 1-27 are pending in the application. Claims 1, 4, 19, 20, 22, 25, and 27 are amended. Claims 28-54 have been added.

Paragraph [0008] of the specification is amended to correct a minor editorial error.

Claims 1, 19, 20, 22, and 27 are amended to recite a characteristic of the steel made using the claimed process. Support for a substantially homogeneous ferrite microstructure is found in Applicants' specification at, for example, paragraphs 0034, 0049, and 0053, and FIGS. 9 and 10. Claim 20 is amended to correct a typographical error.

Claims 4 and 25 are amended to change the minimum amount of deformation at the first roll stand to -0.78 in true reduction strain, or about 54%, and the deformation at the second roll stand to -0.65 in true reduction strain, or about 48%, as calculated by the equation in paragraph 0008 of the specification. This amendment is supported by Table 2, Trials C, D, and E in Applicants' specification.

Claim Rejections – 35 USC § 102 based on Hensger patents

Claims 1-27 stand rejected under 35 U.S.C. § 102(b) as anticipated by US Patent No. 6,030,470 to Hensger et al. (the “ ‘470 patent”) or US Patent No. 6,231,696, also to Hensger et al. (the “ ‘696 patent”) (collectively, “the Hensger patents”). Claims 1, 19, 20, 22, and 27 as amended are the independent claims subject to this rejection. The Examiner first contends that the Hensger patents disclose all of the elements that are recited in claim 1. Applicants respectfully traverse the Examiner's contention.

To anticipate a claim or render it obvious, a reference must:

- 1) disclose each and every limitation of the claimed invention;
- 2) be enabling; and
- 3) describe the claimed invention sufficiently to place it in possession of a person of ordinary skill in the field of the invention.¹

The Hensger patents do not meet this standard. Among other things, Hensger is not enabling to one of ordinary skill in the art to practice Applicants' claimed method. Specifically, one of ordinary skill in the art would not expect the Hensger patents' disclosed methods to work, and in fact they would not work. *See* Declaration of Anthony J. DeArdo ¶¶ 12-16 (attached hereto).

The disclosed methods of the Hensger patents would not be expected by one of ordinary skill in the art to result in steel with a substantially homogeneous ferrite microstructure as required by amended claim 1, and if used in practice the methods would not do so. *See id.* Such a result is recited in Applicants' amended independent claims, and accordingly the Hensger patents are not enabling to one of ordinary skill in the art to practice the claimed methods. Consequently, Applicants respectfully request that the Examiner withdraw this rejection.

For the same reasons that claim 1 is allowable, independent amended claims 19, 20, 22, and 27 are allowable. With respect to the dependent claims, because claims 2-18 depend directly or indirectly from independent claim 1, claim 21 depends from claim 20, and claims 23-26 depend directly or indirectly from claim 22, Applicants submit that these claims are also patentable for at least the same reasons as the corresponding independent claim from which each depends. Furthermore, each of these dependent claims recites a unique combination of elements not disclosed or suggested by the Hensger patents.

¹ *Helifix Ltd. v. Blok-Lok, Ltd.*, 54 USPQ2d 1299 (Fed. Cir. 2000).

In addition, the Examiner stated in the Office Action that reduction strain as recited in one or more claims is not taught by the Hensger patents, but that such limitations would be expected in the Hensger patent process since similar to the present invention grain refinement and homogeneous microstructure are obtained to optimize mechanical properties. In order for a reference to anticipate a claimed invention, the reference must teach each and every element in the precise arrangement set forth in the claim. If the reference fails to teach even one of the claimed features, the reference does not and cannot anticipate the claimed invention. Based upon the following additional deficiencies of the Hensger patents, Applicant respectfully requests that the rejections be withdrawn.

Applicants' claims 4 and 25 as amended recite deformation at the first and second roll stands equivalent to at least approximately -0.78 and -0.65 in true reduction strain (54% and 48%), respectively. The '470 patent discloses a deformation of 50% at the first roll stand and 30% at the second roll stand. Nothing in the Hensger patents teaches or discloses similar deformations to amended claims 4 and 25 or any deformations other than conventional values. *See* Declaration of Anthony J. DeArdo ¶ 13. Reductions must increase over conventional amounts in order for there to be improved mechanical properties and grain refinement with homogeneity. *See id.*

Applicants' claims 5, 9, 12, 15, 18, 19, and 27 recite cumulative deformations in the full recrystallization region of at least approximately -1.39 in true reduction strain (75%). The '470 patent discloses 50% or -0.69 in true reduction strain at the first roll stand, and 40% or -0.51 in true reduction strain, for a cumulative total of -1.20 in true reduction strain, or 70%, less than Applicants' claimed approximate minimum of 75%. Again, nothing in the Hensger patents teaches or discloses similar deformations to claims 5, 9, 12, 15, 18, 19, and 27 or any

deformations other than conventional values, which must increase in order for there to be improved mechanical properties and grain refinement with homogeneity. *See id.*

Finally, Applicant's claims recite interpass times not taught by the Hensger patents. In the Hensger patents it is not clear whether or not the interpass time between the second and third roll stands is greater than the time between the first and second roll stands, where (in the Hensger patents) complete recrystallization must take place; the Hensger patents do not teach or suggest the interpass times relationships as recited in Applicants' claims 3, 8, 11, 14, 17, 21, and 24.

Claim Rejections – 35 USC § 102 based on Declaration

Claims 1-27 were rejected as anticipated by the Declaration of Christopher A. Tokarz submitted with the Applicant's Information Disclosure Statement filed April 30, 2004. The Examiner stated that the Declaration admitted that the Applicants sold the product made by their process, and that Applicants referred to the sale as experimental, but provided no evidence of confidentiality and control. Evidence of confidentiality and control is provided by the attached Second Declaration of Christopher A. Tokarz, one of the Applicants.

Mr. Tokarz's employer, Nucor Corporation, had and has an oral agreement and relationship of confidentiality with its customer that performed the testing, American Cast Iron Pipe Company (ACIPCO). *See* Second Declaration of Christopher A. Tokarz ¶ 4. Nucor and ACIPCO operated with the understanding and oral agreement, consistent with all of their dealings, that information disclosed by Nucor to ACIPCO would be maintained as confidential by ACIPCO. Further, the Federal Circuit "[i]n some cases . . . has determined that a use before the critical period was not public even without an express agreement of confidentiality." *Invitrogen v. Biocrest Mfg.*, 76 USPQ2d 1741, 1745 (Fed. Cir. 2005). Close association of a patentee and the party performing testing is a basis for confidentiality meeting the requirements

for experimental use. *See, e.g., Moleculon Research Corp. v. CBS, Inc.*, 229 USPQ 805, 808 (Fed. Cir. 1986); *TP Labs., Inc. v. Professional Positioners, Inc.*, 220 USPQ 577, 583 (Fed. Cir. 1984). “The presence or absence of . . . [an express confidentiality] agreement is not determinative of the public use issue.” *Moleculon*, 229 USPQ2d at 808. The understanding and commitment of confidentiality between Nucor and ACIPCO is an adequate showing of confidentiality meeting the requirements for experimental use.

With respect to control of the testing, Nucor’s relationship with ACIPCO also meets the requirements for experimental use. Nucor had expectations and knowledge of what tests would be performed and relied on feedback from ACIPCO on the tests in order to develop the invention. *See* Second Declaration of Christopher A. Tokarz ¶ 7. Federal Circuit cases have permitted close relationship and notification of experimental purpose to substitute for full control. *See, e.g., id.; LaBounty Mfg. v. U.S. Int’l Trade Comm’n*, 22 USPQ2d 1025, 1029 (Fed. Cir. 1992) (suggesting that making a customer aware of experimentation may substitute for control).

New Claims

New Claims 28-54 recite features neither taught nor suggested by any of the documents of record. Therefore, these claims are submitted to be patentable and allowance thereof is respectfully solicited. Support for claims 28-32 may be found in FIG. 9 and 10 of Applicants’ application. *See* Declaration of Anthony J. DeArdo ¶ 15. Support for claims 33-54 may be found in paragraphs 0027-0047 of the specification and the accompanying Figures and Tables.

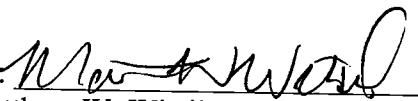
CONCLUSION

In view of the foregoing amendments and remarks, the Applicant respectfully submits that all of the claims in the present application are in condition for allowance. Reconsideration and withdrawal of the rejections and allowance of the claims at the earliest possible date are respectfully solicited. If the Examiner has any questions about the present Amendment or anticipates finally rejecting any claim of the present application, a telephone interview is requested.

Respectfully submitted,

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